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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,789	09/17/2003	Raymund Sonnenschein	235969US0	3776
22850	7590	12/21/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			LUND, JEFFRIE ROBERT	
			ART UNIT	PAPER NUMBER
			1763	
DATE MAILED: 12/21/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/663,789	Applicant(s) SONNENSCHN, RAYMUND	
	Examiner Jeffrie R. Lund	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 17-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-16, and 27, in the reply filed on October 11, 2005 is acknowledged. The traversal is on the ground(s) that "the Examiner has failed to adequately distinguish or define different inventions". This is not found persuasive because Examiner Chen has clearly pointed out that the apparatus as claimed can be use to practice another and materially different process such as etching the cup.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

2. Claim 12 is objected to because of the following informalities: in line 2 "sais" should read --said--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 9 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The lance of claim 9 is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly

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connected, to make and use the lance.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship between the substance-adding unit of claim 1 and lance of claim 9.

Regarding claim 14, the phrase "optionally" renders the claim indefinite because it is unclear whether the limitation following the phrase is part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4, 12, 13, 15, 16, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Sandhu et al, US patent 5,735,960.

Sandhu et al teaches a device that includes: a cup 14; a vertically movable base

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44 oriented in a the direction of the force of gravity and includes a temperature control unit for heating the base and cup; a substance-adding unit 30, 34 having a substance feed line, a metering unit, and a substance outlet oriented in the direction of the force of gravity; a gas tight, vacuum and pressure resistant reactor casing 20; a gas tight cover; an outlet 24; and a gas conveying unit (pump) down stream of the outlet. The cylinder 11 with holes 12 acts as a turbulence barrier and is upstream of the outlet, and the edge of the substance-adding unit 32 projects into the cup. (Entire document) The substance-adding unit inherently has metering units to control the amount and flow rate of the substance being added to the cup.

9. Claims 1, 3-5, 13, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Goela et al, US patent 5,604,151.

Goela et al teaches a device that includes: a cup 18, 100, 108, 110; a base 24, 102, 106, 114 oriented in a the direction of the force of gravity; a temperature control unit 14, 16, 58 for heating the cup; a substance-adding unit having a substance feed line 26, a metering unit 40, 42, 44, and a substance outlet 22 oriented in the direction of the force of gravity and projecting into the cup; a gas tight, vacuum and pressure resistant reactor casing 12; a gas tight cover 10; an outlet 51; a gas conveying unit down stream of the outlet; and a filter 60 between the outlet and gas conveying unit. The base acts as a turbulence barrier and is upstream of the outlet. (Entire document)

10. Claims 1, 2, 4, 12-16, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Plester et al, US patent 5,565,248.

Plester et al teaches a device that includes: a cup 2 with a base and oriented in a

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the direction of the force of gravity; a temperature control unit 3, 39, 40 for heating/cooling the cup; a substance-adding unit having a substance feed line 5, a metering unit 75 and a substance outlet (figures 2A-2G) oriented in the direction of the force of gravity and projecting into the cup through plate 11; a gas tight, vacuum and pressure resistant reactor casing 61, 63 cooled by water supplied in pipes 76, 77; a gas tight cover 60, 63; an outlet; and a gas conveying unit down stream of the outlet; and a filter 60 between the outlet and gas conveying unit. The cup is moved vertically into the reactor casing. (Entire document, specifically figure 4A)

11. Claims 1, 2, 4, 13, 15, 16, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Mahoney, US patent 5,521,351.

Mahoney teaches a device that includes: a cup 32 with a base oriented in a the direction of the force of gravity; a temperature control unit 65 which heats the cup; a substance-adding unit having a substance feed line 45, metering unit, and a substance outlet oriented in the direction of the force of gravity and projecting into the cup; a gas tight, vacuum and pressure resistant reactor casing 24; a gas tight cover 27; an outlet 54; and a gas conveying unit 52 down stream of the outlet. The cup is movable vertically. (Entire document)

12. Claims 1, 4, 6, and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Padovani, US patent 4,207,360.

Padovani teaches a device that includes: a cup 12 with a base 30 oriented in a the direction of the force of gravity; a temperature control unit 22 which heats the cup; a substance-adding unit (silicon seed particles) having a substance feed line, metering

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unit, and a substance outlet oriented in the direction of the force of gravity and projecting into the cup; a temperature sensor unit in the region of the substance adding unit; a gas tight, vacuum and pressure resistant reactor casing 15 equipped with cooling coils 20; a gas tight cover 28; an outlet 25; and a gas conveying unit down stream of the outlet. (Entire document) The silicon seed particles inherently have a metering unit and feed line to supply the proper amount of silicon seed particles to the cup.

13. Claims 1, 3, 4, 12, 13, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Stringfellow et al, US patent 4,147,571.

Stringfellow et al teaches a device that includes: a cup 33; a base 31 oriented in a the direction of the force of gravity; a temperature control unit 25 for heating the cup; a substance-adding unit having a substance feed line 41, 43, 45, a metering unit, and a substance outlet oriented in the direction of the force of gravity and projecting into the cup through a lid; a gas tight, vacuum and pressure resistant reactor casing 35; a gas tight cover; an outlet 47; and a gas conveying unit down stream of the outlet. The cup acts as a turbulence barrier and is upstream of the outlet. (Entire document) The substance-adding unit inherently has metering units to control the amount and flow rate of the substance being added to the cup.

14. Claims 1, 3, 4, 13, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Cheney et al, US patent 3,338,761.

Cheney et al teaches a device that includes: a cup 16; a base 18 oriented in a the direction of the force of gravity; a temperature control unit 28 for heating the cup; a substance-adding unit having a substance feed line 20, a metering unit, and a

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substance outlet (lance) oriented in the direction of the force of gravity and projecting into the cup through; a gas tight, vacuum and pressure resistant reactor casing 10; a gas tight cover 11, 12; an outlet 27; a turbulence barrier 17 upstream of the outlet; and a gas conveying unit down stream of the outlet. (Entire document) The substance-adding unit inherently has metering units to control the amount and flow rate of the substance being added to the cup.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al, US Patent 4,207,360, in view of Ahn, US Patent Application Publication 2002/0122885 A1.

Padovani et al was discussed above.

Padovani et al differs from the present invention in that Padovani et al does not teach that the substance-adding unit or cup is silicon, the base is a silicon wafer, or the size of the cup and base.

Ahn teaches making a showerhead from silicon wafer. (Paragraphs 0008, 0021)

The selection of a specific size of the cup and base are an obvious design choice in order to optimize the cup and base.

The motivation for making the substance-adding unit and cup of Padovani et al

out of silicon is to provide an alternate material of construction as taught by Ahn.

The motivation for making the base of Padovani et al out of silicon wafer is to provide an alternate material and method of construction as taught by Ahn.

The motivation for making the cup and base a specific size is to optimize the cup and base of Padovani et al. Furthermore, it was held in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), by the Federal Circuit that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. (Also see MPEP 2144.04 (d))

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the substance-adding unit and cup of Padovani et al out of silicon as taught by Ahn, to make the base of Padovani et al out of a silicon wafer as taught by Ahn, and to optimize the size of the cup and base.

17. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheney et al, US Patent 3,338,761, in view of Ahn, US Patent Application Publication 2002/0122885 A1.

Cheney et al was discussed above.

Cheney et al differs from the present invention in that Cheney et al does not teach that the substance-adding unit or cup is silicon, or the size of the cup and base.

Ahn teaches making a showerhead from silicon. (Paragraphs 0008, 0021)

The selection of a specific size of the cup and base are an obvious design choice in order to optimize the cup and base.

The motivation for making the substance-adding unit and cup of Cheney et al out of silicon is to provide an alternate material of construction as taught by Ahn.

The motivation for making the cup and base a specific size is to optimize the cup and base of Cheney et al. Furthermore, it was held in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), by the Federal Circuit that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. (Also see MPEP 2144.04 (d))

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the substance-adding unit and cup of Cheney et al out of silicon as taught by Ahn, and to optimize the size of the cup and base.

18. Claims 8, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandhu et al, US Patent 5,735,960, in view of Ahn, US Patent Application Publication 2002/0122885 A1, and Padovani, US Patent 4,207,360.

Sandhu et al was discussed above, and includes a silicon wafer 50.

Sandhu et al differs from the present invention in that Sandhu et al does not teach that the cup is silicon, the base is a silicon wafer, the size of the cup and base, or that the cup rests on the base.

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Ahn teaches making a showerhead from silicon. (Paragraphs 0008, 0021)

The selection of a specific size of the cup and base are an obvious design choice in order to optimize the cup and base.

Padovani is discussed above, and includes a tube wall of the cup setting on the base, i.e. the external diameter of the tube is less than or equal to the diameter of the base.

The motivation for making the cup of Sandhu et al out of silicon is to provide an alternate material of construction as taught by Ahn.

The motivation for making the cup and base a specific size is to optimize the cup and base of Sandhu et al. Furthermore, it was held in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), by the Federal Circuit that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. (Also see MPEP 2144.04 (d))

The motivation for standing the tube of the cup on the silicon substrate of Sandhu et al is to provide an alternate arrangement of the cup as taught by Padovani.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the cup of Sandhu et al out of silicon as taught by Ahn, optimize the size of the cup and base, and to arrange the cup of Sandhu et al on the substrate of Sandhu et al as taught by Padovani.

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19. Claims 8, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stringfellow et al, US Patent 4,147,571, in view of Ahn, US Patent Application Publication 2002/0122885 A1, and Padovani, US Patent 4,207,360.

Stringfellow et al was discussed above, and includes a silicon wafer 39.

Stringfellow et al differs from the present invention in that Stringfellow et al does not teach that the cup is silicon, the base is a silicon wafer, the size of the cup and base, or that the cup rests on the base.

Ahn teaches making a showerhead from silicon. (Paragraphs 0008, 0021)

The selection of a specific size of the cup and base are an obvious design choice in order to optimize the cup and base.

Padovani is discussed above, and includes a tube wall of the cup setting on the base, i.e. the external diameter of the tube is less than or equal to the diameter of the base.

The motivation for making the cup of Stringfellow et al out of silicon is to provide an alternate material of construction as taught by Ahn.

The motivation for making the cup and base a specific size is to optimize the cup and base of Stringfellow et al. Furthermore, it was held in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), by the Federal Circuit that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

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(Also see MPEP 2144.04 (d))

The motivation for standing the tube of the cup on the silicon substrate of Stringfellow et al is to provide an alternate arrangement of the cup as taught by Padovani.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the cup of Stringfellow et al out of silicon as taught by Ahn, optimize the size of the cup and base, and to arrange the cup of Stringfellow et al on the substrate of Stringfellow et al as taught by Padovani.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art teaches the technological background of the invention.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

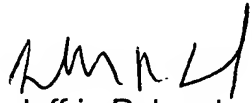
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrie R. Lund
Primary Examiner
Art Unit 1763

JRL
12/19/05